

AMENDMENTS TO THE CLAIMS

Presented below is a complete set of claims with current status indicators.

1. (currently amended) An output circuit for use in an implantable cardiac stimulation device, comprising:

an output adapted for connection across a load;

a voltage supply circuit that provides an output voltage switchably coupled across the output;

pulse-width modulation circuitry operative to provide a pulse waveform; and

~~a control circuit coupled to the voltage supply and comprising an H-bridge and a pulse width modulation circuit coupled to the H-bridge, wherein the control circuit is operative to act upon the output voltage~~

an H-bridge including a first leg and a second leg, each leg including a first switching device operative to receive the pulse waveform, and alternately couple and decouple the first voltage supply across the output in accordance with the pulse waveform to provide a stimulation output having a pulse-width modulated waveform.

2. (canceled)

3. (canceled)

4. (currently amended) The output circuit of claim [[2]] 1 wherein each leg includes a second switching device that controls polarity of the stimulation output.

5. (original) The output circuit of claim 4 further comprising a polarity control circuit coupled to the second switching device of each leg of the H-bridge.

6. (currently amended) The output circuit of claim [[2]] 1 further comprising a comparison circuit that compares a desired output waveform to a timing waveform and provides control signals, ~~the first switching devices being responsive to the control signals to the pulse-width modulation circuitry to define the pulse waveform.~~

7. (currently amended) The output circuit of claim 1 further comprising a capacitor coupled ~~between the legs of the H-bridge across the output and operative to receive current from the voltage supply when the voltage supply is coupled across the output and to supply current to the output when the voltage supply is decoupled across the output.~~

8. (original) The output circuit of claim 7 wherein the capacitor is a non-polar capacitor.

9. (currently amended) The output circuit of claim 7 further comprising an inductor coupled in series with the legs of the H-bridge and a pair of ~~back~~ blocking diodes coupled to the inductor.

10. (currently amended) The output circuit of claim 1 wherein ~~the H-bridge comprises a plurality of legs, the first switching device of each leg including output voltage modulating device is operative to receive a pulse waveform from pulse-width modulation circuitry.~~

11. (currently amended) The output circuit of claim 10 wherein ~~the second switching device of each leg further includes is operative to receive a control signal from a polarity control device circuit.~~

12. (currently amended) The output circuit of claim 11 wherein the H-bridge comprises first, second, and third legs and wherein, when the ~~polarity control device of the first leg controls the polarity~~ second switching device of the first leg receives a polarity control signal, the ~~output voltage modulating devices~~ first switching devices of the second and third legs are configured to independently modulate the output voltage ~~receive a pulse waveform.~~

13. (original) An output circuit for use in an implantable cardiac stimulation device, comprising:

a voltage supply circuit that provides an output voltage and

a control circuit comprising an H-bridge that pulse-width modulates the output voltage to provide a stimulation output having a pulse-width modulated waveform, the H-bridge comprising a plurality of legs, each leg including a stimulation output polarity control device and a stimulation output modulating device.

14. (currently amended) The output circuit of claim 13 further comprising pulse-width modulation circuit circuitry coupled to the stimulation output modulating device of each leg of the H-bridge.

15. (original) The output circuit of claim 14 further comprising a polarity control circuit coupled to the stimulation output polarity control device of each leg of the H-bridge.

16. (original) The output circuit of claim 13 further comprising a comparison circuit that compares a desired output waveform to a timing waveform and provides control signals, the stimulation output modulation devices being responsive to the control signals.

17. (original) The output circuit of claim 13 further comprising a capacitor coupled between each pair of adjacent legs of the H-bridge.

18. (original) The output circuit of claim 17 wherein each capacitor is a non-polar capacitor.

19. (original) The output circuit of claim 13 wherein the H-bridge comprises first, second, and third legs and wherein, when the polarity control device of the first leg controls the polarity, the stimulation output modulating devices of the second and third legs are configured to independently modulate the output voltage.

20. (currently amended) An output circuit for use in an implantable cardiac device comprising:

an output adapted for connection across a load;

a power source that provides an output voltage switchably coupled across the output;

a pulse-width modulation circuit that generates a pulse-width modulation control signal corresponding to a desired waveform; and

an H-bridge including a first leg and a second leg, each leg including a pulse-width modulation control device operative to receive the pulse-width modulation control signal, and alternately couple and decouple the power source across the output in accordance with the control signal coupled to the power source and to the pulse-width modulation control circuit that modulates the output voltage to provide a stimulation output having the desired waveform.

21. (currently amended) The output circuit of claim 20 further comprising a comparison circuit that compares the desired output waveform to a timing waveform and provides a control signal to the pulse-width modulation circuit to define the pulse-width modulation control signal.

22. (currently amended) The output circuit of claim 20 wherein the H-bridge comprises a plurality of legs, each leg including output voltage modulating device a pulse-width modulation control device.

23. (original) The output circuit of claim 22 wherein each leg further includes a polarity control device.

24. (currently amended) The output circuit of claim 23 wherein the H-bridge comprises first, second, and third legs and wherein, when the polarity control device of the first leg controls the polarity, the output voltage modulating devices of the second and third legs are configured to independently modulate the output voltage alternately couple and decouple the power source across the output.

25. (currently amended) The output circuit of claim 22 further comprising a capacitor coupled ~~between adjacent legs of the H-bridge~~ across the output and operative to receive current from the power source when the power source is coupled across the output and to supply current to the output when the power source is decoupled across the output.

26. (original) The output circuit of claim 25 wherein the capacitor is a non-polar capacitor.